offer unusually little opportunity for the passage from host to host of the wingless parasites. There is thus all too little cross-breeding, and family idiosyncrasies get all too easily preserved and made the basis of species separation. What I propose to do then, in a forthcoming systematic paper on the Mallophaga, is to reduce the number of species of owl *Docophori* and of some other similarly expanded groups. This present note is simply notice to that effect, with a suggestion of the biological reason why.

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ŒNOTHERA AND CLIMATE

IN their interesting account of a recent visit to Bartram's locality for *Œnothera grandiflora*, at Dixie Landing on the Alabama River, Professor de Vries and Mr. Bartlett[1] say:

> Neither *Œ. grandiflora* nor *Œ. Tracyi* has heretofore been known as other than annual, and the abundance of rosettes which would obviously not flower this season was therefore a point of great interest.

In growing *Œ. grandiflora* and many other Œnotheras under a variety of climatic conditions, I have been greatly struck by the different ways in which they respond, both as regards the annual or biennial habit and the time of flowering in a given season. Seeds of a series of *Œnothera grandiflora* forms from Birkenhead, England, which I planted in a tropical greenhouse at the University of Chicago in July, 1907,[2] were grown under tropical conditions, the plants remaining rosettes throughout the winter and flowering in May, 1908. *Œ. Lamarckiana* forms treated in the same manner nearly all remained rosettes indefinitely, *i. e.*, for about twenty-two months, until the experiments were suspended. This difference in behavior I attributed to the fact that *Œ. grandiflora* is adapted to a more southern climate than *Œ. Lamarckiana*. In 1909 I observed typical rosettes of *Œ. grandiflora* growing in midsummer (probably as escapes) in uncultivated land of the Missouri Botanical Garden. Hence in that climate also the plant is biennial. From these and related facts, together with the observations of de Vries and Bartlett, it is probable that all the *Œnotheras* of this group are biennial in their native localities.

When grown from seeds planted in the greenhouse in January or March, *Œ. grandiflora* often omits entirely the rosette stage, beginning to form a stalk when quite a young seedling. In my cultures under these conditions the characteristic leaf-type of the mature rosette is always omitted. The plant, therefore, unlike the *Œ. Lamarckiana* forms, becomes annual by shortening its life cycle.

Plants of *Œ. grandiflora* grown from seeds from Dixie Landing behaved in still a different way in the English climate this year. Seeds were sown in the greenhouse in January, and the young seedlings planted out in the end of May. They formed very imperfect rosettes but, though stem-formation began early and they grew luxuriantly, yet they failed almost completely to come into bloom, only two plants out of two hundred and twenty-one producing any flowers.

Incidentally it may be mentioned that, as I have pointed out elsewhere,[3] *Œ. grandiflora* occurred in the region of Carolina and Virginia as late as 1821 (Barton's "Flora of North America," Vol. I., plate 6). It would be worth careful search to discover if individuals do not still survive in this region, for that was undoubtedly the source of the large-flowered *Œnothera* described by Ray in the "Historia Plantarum," 1686, and which must have belonged to a race either of *Œ. grandiflora* or of *Œ. Lamarckiana*.

Seeds which I obtained from Birmingham,

[1] De Vries, Hugo, and Bartlett, H. H., "The Evening Primroses of Dixie Landing, Alabama," SCIENCE, N. S., 36: 599–601, 1912.

[2] See Gates, R. R., "An Onagraceous Stem without Internodes," *New Phytologist*, 11: 50–53, pls. 2–3, 1912.

[3] Gates, R. R., "Early Historical-botanical Records of the Œnotheras," *Proc. Iowa Acad. Sci.*, 1910, p. 108.

Alabama, through the kindness of Mr. Robert A. Love, yielded a race which behaved in the same way, and which evidently belongs to the *Œ. Tracyi* described by Bartlett.[4] The plants, which were grown at the John Innes Horticultural Institution this year, numbering 173, were very uniform and agreed in general with Bartlett's description. They were very tall and stout, much more so than *Œ. grandiflora,* and several plants showed small buds at the end of September. Certain other facts in this connection are referred to in a paper now in press in the *Transactions* of the Linnean Society.

In growing scores of wild races belonging to the species *Œ. biennis, Œ. muricata, Œ. grandiflora, Œ. argillicola, Œ. Hookeri* and others from various parts of North America, in the climate of England during the past summer, I have been greatly impressed by the constancy and the peculiarity of each race as regards such physiological characters as the strength of the biennial habit, and the time of blooming. The differences in these respects are quite as marked and constant as any morphological characters can be, and in hybrids they are frequently intermediate. Evidently each race is closely adapted to the conditions of the growing season in its own native locality; and within certain limits it is possible to predict what the behavior of a race will be when one knows the latitude and climatic conditions from which it came. The elucidation of the origin of these racial climatic adaptations in *Œnothera* is a most interesting evolutionary problem.

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INHERITANCE OF THE RUSSET SKIN IN THE PEAR

THE russet skin occurs commonly in the pear and it is found in amounts varying from 0 per cent. to 100 per cent. In Ragan's "Nomenclature of the Pear"[1] are described 547 varieties having no russet, and 772 varieties having a very light to a solid russet covering. In the latter class only 16 are given as simply "russet"; however, several others, as the Bosc, should come under this head. The low number of russet individuals indicates that the russeting is recessive to the smooth-skinned condition, and that many of the partially russeted and smooth-skinned pears must be heterozygous—the dominance of the smooth-skinned condition being frequently incomplete.

The results obtained at the New York Agricultural Experiment Station, Geneva, New York, support such a postulation. In a cross between Kieffer ♀ and Elizabeth ♂, both parents having smooth skins, were obtained two russeted and ten smooth-skinned seedlings. This population is too few in number to allow one to draw definite conclusions; nevertheless, it approaches closely a simple 3:1 Mendelian segregation. In a cross between Bosc ♀ and Kieffer ♂, the ♀ parent having a russet skin and the ♂ parent carrying the russet condition as a recessive?, there were produced five seedlings—two of which were smooth-skinned and three russeted. The progeny of this latter cross approximate a 1:1 Mendelian ratio, viz., one individual is homozygous to the smooth-skinned condition and one individual is heterozygous to russeting. As a Russet Bartlett of unknown origin, differing from the normal Bartlett in no character except the skin—even in the self-sterility of the blossoms—is growing on the experiment station grounds, it is reasonable to suppose that the russet condition is due to a loss of a determining factor, for the loss of a character is much more common than the addition of a new one.

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[4] Bartlett, H. H., "Systematic Studies on *Œnothera*. I. *Œnothera Tracyi* sp. nov.," *Rhodora,* 13: 209–211, pl. 93, 1911.

[1] U. S. Dept. Agric., B. P. I. Bull. 126, 1908.

SOCIETIES AND ACADEMIES

ACADEMY OF SCIENCE, ST. LOUIS

A MEETING of the Academy of Science of St. Louis was held at the academy building, Monday, November 18, President Englar in the chair.